

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of cardiac catheterization for controlling the displacement of a catheter tip with respect to the a heart of a patient and correcting any undesirable deviation of the catheter tip, ~~characterized by~~comprising the steps of:

(a) producing monitoring signals during ~~the advance~~advancement of the catheter along a blood vessel by providing the catheter (C) with at least one sensor (Sm) adapted to deliver cardiac signals that represent an internal cardiogram of the patient and are modified by any deviation of the catheter tip preventing the advance of the catheter,

(b) comparing said monitoring signals with a reference during the advance of the catheter,

(c) enabling the advance of the catheter when said monitoring signals correspond to said reference and interrupting the advance of the catheter when said monitoring signals deviate from said reference in order to return the catheter tip to a position enabling its advance.

2. (Currently Amended) The method according to claim 1, ~~characterized~~

~~by comprising the further step of~~ verifying the entry of the catheter tip into ~~the~~ a heart atrium of the patient by detecting an increase in ~~the~~ amplitude of cardiac signals corresponding to ~~the~~ atrial impulses appearing on said internal cardiogram of the patient.

3. (Currently Amended) The method according to claim 2, comprising the further step of ~~characterized by~~ verifying the passage of the catheter tip from the atrium to ~~the~~ a ventricle of the patient by detecting a significant increase in the amplitude of the cardiac signals corresponding to ventricular impulses that appear on said internal cardiogram of the patient.

4. (Currently Amended) The method according to claim 3, ~~characterized by~~ comprising the further step of verifying ~~the~~ contact of the catheter tip with ~~the~~ a wall of the heart cavity by creating impulses at the tip of the catheter and detecting the appearance of corresponding induced signals on a surface cardiogram of the patient.

5. (Currently Amended) A cardiac catheterization system, comprising:
~~characterized by:~~

(a) a catheter (C) provided with at least one sensor (Sm) that comprises a bipolar electrode and a flow sensor and is adapted to deliver cardiac signals that represent an internal cardiogram of a patient undergoing catheterization and are modified by any deviation of the catheter tip preventing ~~the~~ advance of the catheter,

(b) a central processor (CP) connected to said sensor (Sm) via a first filter

(FI), a first analog-to-digital converter (A/D 1) and a first signal processor (SP1), said central processor (CP) further being connected to a device (SCG) for obtaining a surface cardiogram of the patient via a second filter (F2), a second analog-to-digital converter (A/D2) and a second signal processor (SP2), said central processor (CP) being adapted to deliver a GO signal, a STOP signal and an END signal to respectively enable, interrupt or terminate the advance of the catheter.